

Applicant: Tino Hänsel
Application No.: 10/565,088

REMARKS

Claims 1-17 are currently pending in this application, as amended. By the present amendment, claims 1-16 have been amended and claim 17 has been added. Additionally, paragraph [0050] of the specification has been amended. Applicant respectfully submits that no new matter has been introduced into the application by these amendments.

SPECIFICATION OBJECTIONS

In the Action, paragraph [0050] of the specification was objected to because the "controller" was identified with the wrong reference number. This has been corrected so that it is properly referred to as reference number 14. Accordingly, withdrawal of the objection of the specification is respectfully requested.

CLAIM OBJECTIONS

Claim 1 was objected to for a minor formality with respect to the spelling of the term "comprising". This has been corrected. Accordingly, withdrawal of the objection to claim 1 has been requested.

CLAIM REJECTIONS – 35 U.S.C. §112

Claims 1-16 were rejected under 35 U.S.C. §112, second paragraph, as indefinite. This rejection was based on the use of the term "preferably" in claim 1. Claim 1 has been amended to remove this term. Accordingly, withdrawal of the Section 112 rejections of claims 1-16 is respectfully requested.

Additionally, clarification was requested with respect to the recitation of the group including "a tensioning device, a camshaft adjuster, a deflection roller or a water pump". The Action properly interpreted this claim as having a sensor

allocated to only one of units listed. In order to avoid further confusion, claim 8 has been amended so that it only refers to the sensor being allocated to a unit of the power transmission drive, and new claim 17 has been added indicating that the unit comprises one of the listed items. Accordingly, withdrawal of the Section 112 rejection of claim 8 is respectfully requested.

CLAIM REJECTIONS – 35 U.S.C. §102

Claims 1 and 10-14 were rejected as anticipated by U.S. 5,733,214 to Shiki et al.. Applicant respectfully traverses this rejection.

As amended, claim 1 is directed to a power transmission drive including a synchronous drive for an internal combustion engine with which a rotating angle between a driven member and a drive member can be detected. A member of the power transmission drive includes an electronic controller which interacts with a control system of the internal combustion engine and a sensor, comprising a transducer, detects an oscillating angle deviation, a rotating angle deviation, an irregularity in RPM, or a correcting movement between the driven member and the drive member and sends a signal to the controller which calculates a control parameter. After a defined limit value is exceeded, the controller initiates an emergency program of the internal combustion engine to operate the internal combustion engine at a lower power level.

Shiki et al. discloses a synchronous drive having sensors for detecting an oscillating angle or rotating angle deviation of an internal combustion engine which are used by the CPU to control an actuator (A) used to adjust the tension of the belt automatically so that the timing between the crankshaft and camshaft is properly maintained. However, there is no suggestion or disclosure of the controller initiating an emergency program of the internal combustion engine to operate the

internal combustion engine at a lower power level once a defined limit value is exceeded. Accordingly, withdrawal of the Section 102(b) rejection of claim 1 is respectfully requested.

Claims 10-14 depend directly or indirectly from claim 1 and should be patentable over this reference for the reasons noted above in connection with claim 1.

Claims 1 and 8-14 were rejected under 35 U.S.C. §102(b) as anticipated by JP 62-180157 to Inagaki et al. Applicant respectfully traverses this rejection.

Inagaki et al. is directed to a synchronous drive for an internal combustion engine in which a rotary fluctuation is calculated at 24 angular positions per rotation of the camshaft. This is compared to a mean value in order to determine whether a tension adjustment for the timing belt is required. When correction is required, a warning lamp is lit and a tension pulley is actuated thereby adjusting the tension of the timing belt. However, as noted above, the present invention provides a controller that initiates an emergency program of the internal combustion engine to operate the internal combustion engine at a lower power level once a defined limit value is exceeded. This is neither suggested nor disclosed by this reference. Accordingly, withdrawal of the Section 102(b) rejection of claim 1 is respectfully requested.

Claim 8-14 depend directly or indirectly from claim 1 and should be similarly patentable.

CLAIM REJECTIONS – 35 U.S.C. §103

Claims 2 and 7 were rejected under 35 U.S.C. §103 as obvious in view of Shiki et al. in view of JP 2003184682 to Inada. Applicant respectfully traverses this rejection.

Claim 2 depends from claim 1 and further recites that a free engine clutch is allocated to the driven member or the drive member to prevent an accelerated angular velocity of the power transmission drive. Inada teaches a fuel injection pump with a free engine clutch to prevent reverse rotation. However, Inada does not address the deficiencies noted above with respect to Shiki et al. in connection with claim 1. Accordingly, claim 2 should be patentable over this combination.

Claim 7 also depends from claim 1 and would be patentable over this combination for the same reasons as noted above in connection with claim 1.

Claim 3 was rejected under 35 U.S.C. §103 as unpatentable over the combination of Shiki et al. and U.S. 5,839,401 to Gruber et al. Applicant respectfully traverses this rejection.

Claim 3 depends from claim 1 and should be similarly patentable for the reasons noted above in connection with claims 1. Gruber et al. is cited as teaching an internal combustion engine having a power transmission drive connected to a running wheel of the power transmission drive acting as a control drive of the internal combustion engine. However, this does not address the above-noted deficiencies of Shikki et al. with respect to claim 1. Accordingly, withdrawal of the Section 103 rejection of claim 3 is respectfully requested.

Claims 4-6 and 15 were rejected under 35 U.S.C. §103 as unpatentable over Shiki et al. in view of Gruber et al. as applied to claim 3, further in view of Inada. Applicant respectfully traverses this rejection.

Claim 4 depends from claim 3 and recites that the power transmission drive includes, as a drive member, a fuel pump which in connection with an associated sensor, the controller and a free engine clutch, prevents a full-load operation of the internal combustion engine for a disruption in a function of the fuel pump.

Shiki et al. is deficient for the reasons noted above in connection with claim 1. Further, Inada has been cited as teaching a power transmission drive including a fuel pump with a free engine clutch which prevents full-load operation of the internal combustion engine for an accelerated angular velocity of the power transmission drive. However, claim 4 specifically requires that full-load operation of the internal combustion engine is prevented for a disruption in a function of the fuel pump. This is not taught by Inada which merely provides the one way clutch to prevent a reverse rotation of the fuel pump. According to the present invention, when the free engine clutch or fuel pump fail during operation, the engine power is lowered so that it can continue to operate to provide fuel necessary for the engine to run at a lower power level while at the same time not causing the failure of the power transmission drive due to the timing belt stretching or failing due to the increased load created by the defective fuel pump or failed free engine clutch. Thus, rather than merely preventing a reverse rotation as provided by Inada, the invention according to claim 4 provides for continuing function of the internal combustion engine even when the fuel pump is failing so that a service station can be reached. Accordingly, claim 4 should be patentable over this combination.

As to claims 5, 6 and 15, these claims depend directly or indirectly from claim 1 and should be patentable over this combination for the reasons noted above in connection with claim 1. Namely, none of the references whether taken alone or in combination suggest or disclose a controller that initiates an emergency program when a defined limit value is exceeded by a control parameter so that the internal combustion engine is operated at a lower power level. Accordingly, withdrawal of the Section 103 rejection of claims 5, 6 and 15 is also requested.

Claim 16 was rejected under 35 U.S.C. §103 as unpatentable over the combination of Shiki et al. and U.S. 2004/0251758 to Wilmore.

Claim 16 depends from claim 1 and should be patentable for the reasons noted above in connection with claim 1. Wilmore is cited as teaching a starter generator (ISG) which can be run in both a starting mode and a generator mode. However, this reference is silent with respect to the deficiencies of Shiki et al. Accordingly, withdrawal of the Section 103 rejection of claim 16 is respectfully requested.

Claims 2 and 7 were rejected under 35 U.S.C. §103 as unpatentable over the combination of Inagaki et al. in view of Inada. Applicant respectfully traverses this rejection.

Claims 2 and 7 both depend from claim 1 and should be patentable for the reasons noted above in connection with claim 1. Both Inagaki et al. and Inada fail to suggest or disclose a controller that initiates an emergency program of the internal combustion engine once a defined limit value of a control parameter is exceeded in order to operate the internal combustion engine at a lower power level. Accordingly, these claims should be patentable over this combination.

Claim 3 was also rejected under 35 U.S.C. §103 as unpatentable over the combination of Inagaki et al. in view of Gruber et al. Applicant respectfully traverses this rejection.

Claim 3 depends from claim 1 and, as noted above, Inagaki et al. and Gruber et al. both fail to suggest or disclose all of the elements recited in claim 1. Accordingly, claim 3 should be patentable over this combination.

Claims 4-6 and 15 were rejected under 35 U.S.C. §103 as unpatentable over Inagaki et al. in view of Gruber et al. and Inada. Applicant respectfully traverses this rejection.

As noted above, claim 4 provides for a specific operation of an internal combustion engine during failure of a fuel pump wherein the controller operates the

internal combustion engine at a lower power level. This is neither suggested nor disclosed by any of Inagaki et al., Gruber et al. or Inada. Accordingly, withdrawal of the Section 103 rejection of claim 4 is respectfully requested.

As to claims 5, 6 and 15, these claims depend from claim 1 and should be patentable over this combination for the reasons noted above in connection with claim 1.

Claim 16 was rejected under 35 U.S.C. §103 as unpatentable over the combination of Inagaki et al. in view of Wilmore. Applicant respectfully traverses this rejection.

Claim 16 depends from claim 1 and should be patentable over this combination for the reasons noted above in connection with claim 1. Neither Inagaki et al. nor Wilmore suggest or disclose the controller that initiates an emergency program of the internal combustion engine to operate the internal combustion engine at a lower power level once a defined limit value is exceeded. Accordingly, withdrawal of the Section 103 rejection of claim 16 is respectfully requested.

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CONCLUSION

If the Examiner believes that any additional minor formal matters need to be addressed in order to place the present application in condition for allowance, the Examiner is invited to contact the undersigned by telephone at the Examiner's convenience in order to address any such matters.

In view of the foregoing amendments and remarks, Applicant respectfully submits that the present application, including claims 1-17, is in condition for allowance, and a Notice to that effect is respectfully requested.

Respectfully submitted,

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